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Marine Casualty Investigations

Enquêtes sur les accidents maritimes

Investigation Report to the Minister pursuant to sections 542 or 545 of the Canada Shipping Act

Rapport d'investigation au Ministre conformément aux articles 542 ou 545 de la Loi sur la marine marchande du Canada

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Ce rapport est aussi disponible en français.

INVESTIGATION REPORT INTO THE CIRCUMSTANCES ATTENDING THE CAPSIZING OF THE CANADIAN FISHING VESSEL "STRIDER KING" FOLLOWING A COLLISION WITH THE CANADIAN LOG BARGE "SEASPAN HARVESTER" OFF THE NORTH COAST OF VANCOUVER ISLAND ON JUNE 18, 1986.

REPORT No. 464

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INVESTIGATION REPORT INTO THE CIRCUMSTANCES ATTENDING THE CAPSIZING OF THE CANADIAN FISHING VESSEL "STRIDER KING" FOLLOWING A COLLISION WITH THE CANADIAN LOG BARGE "SEASPAN HARVESTER" OFF THE NORTH COAST OF VANCOUVER ISLAND ON JUNE 18, 1986.

Particulars of Vessels

Vessel 1

Name	"STRIDER KING"
Official Number	344912
Port of Registry	Nanaimo, B.C.
Call Sign	VD 2914
Gross Tonnage	76.0
Net Tonnage	39.2
Registered Length	17.83 m
Registered Breadth	5.61 m
Depth- Moulded	2.80 m
Draught	Not known
Type	Small Fishing Vessel
Built	1971, B.C.
Propulsion	One GM diesel engine, 254 kW (340 b.h.p.) single fixed-pitch propeller
Steering	Hydraulic
Crew	2
Owners	J.S. McMillan Fisheries Limited Vancouver, B.C.

Navigating Equipment

Magnetic Compass	E.S. Ritchie & Sons
Automatic Pilot	Wagner Mk IV

Radar (Starboard)	Sperry
Radar (Port)	Furuno FRA-10
Loran 'C' (1)	Furuno LC-90
Loran 'C' (2)	DMEC Northstar 6000, automatic with micro-processor
Echo Sounder (1)	C Tech KAIJO
Echo Sounder (2)	Furuno
VHF Radiotelephone (1)	SBG, SCV 9708
VHF Radiotelephone (2)	Regency
SSB Radiotelephone	DS 1200

Vessel 2

Name	"SEASPAN CHALLENGER" ex "HECATE CROWN"
Official Number	344602
Port of Registry	Vancouver, B.C.
Call Sign	VDLT
Gross Tonnage	501
Net Tonnage	124
Registered Length	37.2 m
Registered Breadth	9.8 m
Depth Moulded	4.3 m
Draught (approximate)	3.96 m forward 5.18 m aft
Type	Steel tug
Built	1970, New Westminster, B.C.
Propulsion	One GM diesel engine, 2687 kW (3600 b.h.p.) single fixed-pitch propeller

Steering	Hydraulic
Crew	8
Owners	Seaspan International Ltd., North Vancouver, B.C.

Navigating Equipment

Magnetic Compass	John Lilley & Gillie Ltd.
Gyro Compass	Sperry SPS 120 with Wagner MK IV autopilot
Radar (1)	Decca RM 1226
Radar (2)	Kelvin Hughes type 1600 with an "E-Plot" electronic manual plotting device
Depth Sounder (1)	Raytheon DE750
Depth Sounder (2)	Apelco MS60/60
Loran 'C' (1)	Decca DL 91/Mk 2
Loran 'C' (2)	Raytheon Raynav 550
VHF Radiotelephone (1)	Apelco AF-40MA multi-channel
VHF Radiotelephone (2)	Raytheon Ray 55 multi-channel
VHF Radiotelephone (3)	Standard 5 channel, portable
VHF Radiotelephone (4)	Triton 4 channel, portable
SSB Radiotelephone (1)	Motorola, Triton
SSB Radiotelephone (2)	Motorola, Triton 40-S
Watch Receiver	2181, Mariner 1511

Vessel 3

Name	"SEASPAN HARVESTER" ex "CROWN ZELLERBACH NO.1"
Official Number	344635

Port of Registry	Vancouver, B.C.
Gross Tonnage	5,880
Net Tonnage	5,878
Registered Length	110.64 m
Registered Breadth	24.35 m
Depth Moulded	7.32 m
Draught (approximate)	4.88 m forward 5.79 m aft
Type	Non-propelled log tipping barge
Built	1970, North Vancouver, B.C.
Owners	Seaspan International Ltd North Vancouver B.C.

Description of Vessels

The "STRIDER KING" is a typical small dragger of steel construction, with the engine directly controlled from the wheel-house and a full sea speed of approximately 9 knots.

The navigational, lifesaving and fire fighting equipment of the "STRIDER KING" fully complied with the Small Fishing Vessel Inspection Regulations.

The "STRIDER KING", being over 15 tons gross, was subject to quadrennial inspection by the Ship Safety Branch of the Canadian Coast Guard. She was last inspected on May 25, 1983, her Home Trade II Ship Safety Inspection Certificate was valid until May 23, 1987 and it was reported that the vessel was well maintained and that her navigational equipment was in good working order.

The "SEASPAN CHALLENGER" was so named when taken over by the present owners in 1985.

The "SEASPAN CHALLENGER" is subject to inspection by the Ship Safety Branch of the Canadian Coast Guard. She is classed Home Trade I and her last Steamship Inspection Certificate was issued on February 13, 1986 at Vancouver; the expiry date is February 12, 1987.

The machinery and nautical equipment of the "SEASPAN

CHALLENGER" were in good working order and she carried a duly certificated master and officers as required by the Canada Shipping Act. Her operational speed was approximately 9 knots.

The "SEASPAN HARVESTER" is a specialized log-carrying barge which is used for transporting logs on deck from remote logging camps to the yarding sites on the B.C.coast. The barge is unmanned whilst at sea.

The "SEASPAN HARVESTER" was towed by a bridle consisting of two stud-link chain pendants of about twenty-two metres in length shackled to heavy ring bolts, one under the other, welded to the stem of the vessel. The other ends of the pendants were shackled together to the towline of the tug. Her deadweight is approximately 10,000 t (see photographs).

Particulars of Deceased from F.V. "STRIDER KING"

Name:	Gordon Berringer
Age:	36
Address:	North Vancouver, B.C.
Position aboard Vessel:	Skipper
Cause of Death:	Drowning, body recovered

Name:	Alphonse Samson
Age:	42
Address:	Surrey, B.C.,
Position aboard Vessel:	Engineer/Deck-hand
Cause of Death:	Drowning, body recovered.

Autopsy reports for both persons indicated that the blood ethyl alcohol content was negative.

Note: All times in this report are expressed in Pacific Daylight Saving Time (UTC minus 7 hours).

Background

On the morning of June 18, 1986 the eastbound log barge "SEASPAN HARVESTER", being towed by the tug "SEASPAN CHALLENGER", collided with the westbound fishing vessel "STRIDER KING". The fishing vessel "STRIDER KING" capsized trapping her crew of two.

The collision occurred in daylight, with good visibility and weather conditions, in a position approximately eight nautical miles, bearing 301° True, from Mexicana Point, Hope Island, B.C.

The bodies of the two crew members were recovered and the vessel was subsequently righted and towed to Vancouver for repairs.

There was no reported pollution as a result of this accident.

Narrative

At 0300, June 17, 1986 the fishing vessel "STRIDER KING" departed McMillan Fisheries wharf at Vancouver Harbour. She had a crew of two on board consisting of a skipper and a deck-hand.

The "STRIDER KING" proceeded through Johnstone Strait and Goletas Channel en route to the fishing grounds at Queen Charlotte Sound about 10 miles north of Vancouver Island. She passed Masterman Island at 0145 and Bull Harbour at 0410 on June 18th and thence over Nahwitti Bar in an approximate direction of 280° Magnetic, on automatic pilot. Her estimated speed was approximately 8 knots over the ground.

At 2115, June 17, 1986, the tug "SEASPAN CHALLENGER" towing the loaded log barge "SEASPAN HARVESTER" departed Kultus Cove on the west coast of Vancouver Island, bound for Andys Bay, in Howe Sound, B.C.

The voyage was uneventful thus far and at 0448, June 18, the tug arrived 7 miles off Christensen Point where the course was altered to 060° True and Gyro. Her speed was 8.9 knots over the ground and with the exception of a brief period, the tug was in hand steering.

The "SEASPAN HARVESTER", clearly visible in daylight, was being towed some 800 metres astern of the "SEASPAN CHALLENGER".

The weather was overcast with light rain, visibility 8 miles, wind south-west 10 knots, rippled sea and low westerly swell. Nautical twilight was at 0433, sunrise at 0516.

At about 0500, a small outbound fishing vessel reportedly passed the tug some two miles off to starboard and a second fishing vessel, later identified as the "STRIDER KING", was first observed on the radar screen of the "SEASPAN CHALLENGER" at about 12 miles and then by sight, some 5 miles distant at about 30° on the starboard bow. The time was then 0510 and a three-minute radar plot indicated that the vessels should pass at a closest approach of about one-half mile with the fishing vessel passing on the tug's starboard beam.

Since it was time to change the watch, the crew was called and the readings for the 0530 position taken from Loran 'C'. At this time as the fishing vessel passed at a distance of under half a mile to starboard it appeared to have altered course to starboard heading across the towline (see chartlet).

The tug, hoping that the fishing vessel would pass over the towline, immediately put the engines in neutral to slacken the line and sounded the fog signal of a towing vessel, consisting of one prolonged blast followed by two short blasts on her whistle. There was no attempt to make contact by radio.

It was recorded that at 0533 the fishing vessel came in contact with the chain bridle of the towed barge. The fishing vessel rolled to port, bounced off the barge's starboard bow and under the pressure of the oncoming barge, rolled over to starboard and capsized, trapping her crew inside.

Since the fishing vessel remained floating upside down, the tug immediately came close to her and dispatched two people in a rowboat to look for survivors.

At 0540 Bull Harbour Coast Guard Radio was informed; the Rescue Coordination Centre (RCC) in Victoria was alerted and a full search commenced. The approximate position of the collision was 50°59'N, 128°11'W.

Some commercial vessels were directed by RCC to the area. The Bull Harbour Lifeboat arrived on scene at 0612 and the Canadian Coast Guard Cutter (CCGC) "READY" at 0830. Since there was no response from inside the fishing vessel to tapping on her plates with a hammer, it was decided to wait for the divers to arrive.

At 0830 the Coast Guard divers made an external examin-

tion of the fishing vessel and identified her as the "STRIDER KING". They saw one body in the wheel-house but because of the poor visibility and the nets and ropes surrounding the vessel, considered it too dangerous to make a more extensive examination of the vessel.

At 0855, Department of National Defence (DND) divers arrived on the scene and at 0958 recovered the body of the deck-hand and the log book from the wheel-house.

In order to maintain buoyancy, air was pumped into the capsized fishing vessel and it was decided to tow her to a safer place. The search was downgraded and the commercial vessels gradually released. CCGC "READY" took the "STRIDER KING" in tow and at 2225 secured her in the Cascade Harbour anchorage at Nigei Island.

At 2259 the divers recovered the body of the skipper from his cabin.

The salvage operation was handed over to the owners of the "STRIDER KING" and the rescue operation was terminated.

The "STRIDER KING" was subsequently righted and towed to North Vancouver where, after her damage was assessed, she was left at a boatyard for repairs.

Analysis

1. The weather

A Marine Forecast issued by Environment Canada at 2345, June 17, 1986 for Queen Charlotte Sound states in part:

> Winds variable 10 to 15 knots shifting to southerly 10 to 20 late Wednesday afternoon. A few showers.

At 0830, June 18, 1986, the report from the Bull Harbour Weather Station read:

> Overcast, visibility 10, light rain, wind south-west 4, sea rippled, low north-westerly swell.

The 0448 weather as recorded in the "SEASPAN CHALLENGER" log book was as follows:

> Barometric pressure 30.14, wind WSW 10, light choppy sea, low westerly swell,

rain, visibility 5-6 miles.

The weather is not considered to have contributed to this casualty.

2. **"STRIDER KING"**

General Remarks:

Since there were no survivors, the last movements of the vessel were reconstructed from information obtained from other sources and from an inspection of the vessel after she was righted following the accident.

The log book entries indicate that in recent years, the vessel used Goletas Channel rather than Gordon Channel when travelling to and from the fishing grounds. The most probable fishing area the vessel was bound for was situated between Loran C rates 13690 and 13714 with a depth of between 48 and 52 fathoms.

On this last voyage, she travelled directly from Vancouver passing Masterman Island at 0145, June 18; the last entry in the log book was when she was passing Bull Harbour at 0410. She was reportedly returning to Vancouver in approximately ten days.

Due to her small size, the "STRIDER KING" usually carried a crew of three, however, on her last voyage, she sailed with a crew of two without the knowledge or consent of the owner.

The location of the bodies when found by the divers indicates that at the time of the casualty the deck-hand was on watch in the wheel-house and the skipper was resting in his cabin, located on the port side abaft the wheel-house. It is not known how much rest the skipper and deck-hand may have had since leaving Vancouver some 26 hours prior to the collision.

The inspection of the wheel-house and the instruments revealed that at the time of collision, the vessel was on automatic pilot, engines on full ahead, radar on 4 mile range in 'stand-by' mode and the navigation light switches and one of the Loran C receivers were in the 'on' position. The operating condition of the second Loran C, being a digital type, was not ascertainable.

The hands of the electric clock in the wheel-house, which was reportedly set to Pacific Standard Time, were stopped at 0430.

The 'watch alarm' timer switch was in the 'off'position. This device, commonly used on board small fishing vessels, is capable of being set for 5 minute intervals up to 30 minutes to keep a single watchkeeper awake, first by flashing a red light and then sounding an alarm.

The course dial of the automatic pilot was reading 335° when the vessel was righted. It was reported that approximately one month previously, a hunting problem with the automatic pilot had been repaired. This problem made it necessary to set the pilot two or three times before it remained steady on course. Whilst unloading his last catch in Vancouver, the skipper of the "STRIDER KING" reported a recurrence of the problem to the owners and indicated that it was his intention to have the problem attended to on his next visit. In the meantime, he was confident he could handle the situation.

The helmsman's seat, found torn from its base, may indicate that the deck-hand was sitting on it and as the vessel was capsizing may have instinctively held on to the armrests and his weight forced it off the bolts.

Forward visibility from the conning position was very good.

The "STRIDER KING", being a vessel of over 15 gross tons, was duly inspected on May 25, 1983 by the Ship Safety Branch of the Canadian Coast Guard and fully complied with the Small Fishing Vessel Inspection Regulations.

The vessel did not have a stability booklet nor was she required to by Regulations. When repairs presently being undertaken are completed, stability tests are reportedly going to be carried out on a voluntary basis and a stability booklet prepared.

The "STRIDER KING" left Vancouver with an unknown quantity of ballast and fuel on board; the weight of the nets on the drums was approximately 500 kgs. However, the question of reserve stability is not considered to be a paramount factor in the capsize.

3. "SEASPAN CHALLENGER" AND "SEASPAN HARVESTER"

General remarks:

The tug "SEASPAN CHALLENGER" was on a routine trip from

Kultus Cove to Andys Bay, B.C. towing the barge "SEASPAN HARVESTER" with a load of logs on deck. The vessels were connected by a towline 823 m (2700 ft) long, made of 57 mm (2.25 in) 6/37 wire rope.

The barge was loaded to a height of approximately 15 m above the deck and was clearly visible in daylight conditions.

The tug was equipped with an electronic manual radar plotting device (E-Plot), gyro compass, automatic pilot, and a computerized Loran 'C' unit, all reportedly in good working order. The electronic radar plotting device allows an observer to electronically plot the position of any vessel on the screen, freeze it, draw the vessel's track in order to establish her course, speed and point of closest approach. On vessels equipped with older types of radar, course plotting is performed manually either on the reflection plotter or the manoevring board.

When the second echo of a fishing vessel, later identified as that of "STRIDER KING", reportedly appeared on the radar screen, it was about 12 miles away and well on the starboard bow. It was assumed that there were two fishing vessels following each other at a distance of about 5 miles.

The three-minute electronic radar plot taken at about 0500 indicated that the "STRIDER KING" would pass the "SEASPAN CHALLENGER" on the starboard side at a distance of between one-quarter and one-half mile.

At 0510 the radar indicated the "STRIDER KING" was some 5 miles and 30° to starboard and it was assumed that the tug and fishing vessel would pass clear of each other to starboard. There was no record of the radar plots kept on board.

The "SEASPAN CHALLENGER" did not maintain a constant relative bearing check of the approaching vessel. The relative movement of the "STRIDER KING" and the "SEASPAN HARVESTER" was apparently not considered.

The "STRIDER KING" passed the "SEASPAN CHALLENGER" about one-quarter to one-half mile away on the starboard beam and at that time, 0530, a Loran position was taken by the tug.

Suddenly, observing the "STRIDER KING" heading across the towline, the "SEASPAN CHALLENGER" put her engines in

neutral and attempted to warn the fishing vessel by sounding the fog signal for a vessel towing which consisted of one prolonged blast followed by two short blasts on her whistle. A more appropriate sound signal would have been the danger or warning signal as required by the International Collision Regulations of at least five short and rapid blasts on her whistle. There was no attempt to contact the "STRIDER KING" by radio.

4. **The heading of the "STRIDER KING"**

The course from Nahwitti Bar to the fishing grounds to which it is believed the "STRIDER KING" was headed is about 305°T. The magnetic variation in the area of the collision is 23°E and although the precise deviation on the "STRIDER KING" is not known the maximum would not normally be more than 5°, making the equivalent heading on the vessel's magnetic compass approximately 280°. Evidence was given that, just prior to the collision, the "STRIDER KING" appeared to have altered course to starboard to cross the bow of the "SEASPAN HARVESTER". In this respect, consideration had to be given as to whether there was any significance in the autopilot course dial being found to be set at 335°. The reading on this dial can represent the heading of the vessel or the course that it was intended to steer and, since the autopilot was found switched on, could have been indicative of an alteration, or an attempt by the "STRIDER KING" to alter course, to starboard.

Any alteration of course by the "STRIDER KING" to avoid collision would logically have been to port so as to go around the stern of the "SEASPAN HARVESTER" if she had sighted the barge in sufficient time. However if the mass of the "SEASPAN HARVESTER" was observed at the last moment close at hand it may have been possible that the person on watch on the "STRIDER KING" could have attempted, in the agony of collision, to go to starboard in an attempt to parallel his course with that of the barge. Setting the autopilot course dial requires a deliberate action in that the large central control knob has to be depressed and then in the depressed condition the course is manually adjusted by a twisting motion of the knob to alter the heading. However, the manufacturers confirmed that shorting the electrical circuits of the unit, as with salt water immersion, can cause the autopilot course dial to settle on any heading; thus the 'as found' reading on the vessel's autopilot dial cannot necessarily be taken either as the course the vessel was steering or as indicating an action to alter course.

5. Collision

The stem of the "STRIDER KING" apparently came in contact with the upper chain bridle of the "SEASPAN HARVESTER". The vessel then rolled to port, smashing the top of her deck-house and her port bow plating against the starboard bow of the barge. Under the momentum of the forward-moving and heavily loaded barge, the fishing vessel veered to starboard and capsized. The whole event took only a few seconds. The barge, still making headway, then passed close to the capsized vessel which remained afloat.

In the context of the collision, it is felt particularly significant that the fishing vessel's engine controls were found to be still full ahead.

6. Damage

As a result of the collision, the port side of the "STRIDER KING"s bulwark and the top side of her wheelhouse sustained extensive damage. There was considerable water damage to the machinery, instruments and the inside of the vessel.

The "SEASPAN HARVESTER" was not damaged.

7. Search and Rescue

The following units took part in the operation and were tasked as follows:

0540 - "SEASPAN CHALLENGER" - Workboat
0550 - Bull Harbour Coast Guard Lifeboat
0552 - CCGC "READY"
0601 - F/V "GULF GRENADIER"
0602 - M.V."HAIDA BRAVE"
0621 - Labrador "R-304", 442 Squadron, Comox
0711 - F.V. "HELMS DEEP"
0815 - BUFFALO "R-456", 442 Squadron, Comox

The commercial vessels were gradually released and the CCGC "RACER" towed the wreck to Cascade Harbour.

8. International Collision Regulations

The International Regulations for Preventing Collisions at Sea prescribe, inter alia, the actions which should be taken by vessels when in a situation involving the risk of collision.

Rule 1 states that these regulations "...apply to all vessels upon the high seas and in all waters connected therewith..." and in this respect the tug "SEASPAN CHALLENGER" and the fishing vessel "STRIDER KING" were equally obliged to comply with the Rules. (The full text of referenced rules is given in the Annex.)

Rule 2 states that "nothing in these Rules shall exonerate any vessel...from the consequences of any neglect to comply..." although "...due regard shall be had to...the limitations of the vessels involved, which may make a departure from these Rules necessary..."

"A vessel restricted in her ability to manoeuvre..." and "...therefore unable to keep out of the way of another vessel" is defined in Rule 3 as including "...a vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course" and such vessels are required to exhibit the lights and shapes set out in Rule 27. The "SEASPAN CHALLENGER" was proceeding at full speed in open water and did not exhibit the signals prescribed in Rule 27. She was not indicating that she was 'restricted in her ability to manoeuvre' and technically this tug and tow were not hampered vessels. It is, however, impossible to abruptly manoeuvre such a large tow at the end of a lengthy towline and therefore particularly important that towing vessels in similar situations take early and positive action to ensure risk of collision situations are avoided.

Rule 5 requires "Every vessel..." to use "...all available means..." to "...maintain a proper look-out..." and Rule 7 has similar requirements in order "...to determine if risk of collision exists."

Rule 7 further states that "proper use shall be made of radar equipment..." but cautions that "assumptions shall not be made on the basis of scanty information, especially scanty radar information" and that "risk of collision...shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change."

It would appear that since the "STRIDER KING" collided with the barge, the fishing vessel failed to keep a proper look-out within the meaning of the International Collision Regulations; however, as there were no survivors, the reasons for this failure are not known: one possible explanation is that the deck-hand had

fallen asleep.

By assuming, on the basis of one three-minute plot on the electronic radar plotting device, that the "STRIDER KING" was a passing vessel, the "SEASPAN CHALLENGER" failed to ascertain that this assumption applied also to the "SEASPAN HARVESTER" which she was towing and for which she was responsible.

The "SEASPAN CHALLENGER" failed to use all available means appropriate in the prevailing circumstances in that she did not attempt to obtain accurate visual bearings, nor did she attempt a continuous check on the movement of the approaching vessel relative to the barge by means of the electronic plotting device with which she was equipped.

Rule 15 states in part that, "when two power-driven vessels are crossing so as to involve risk of collision the vessel which has the other vessel on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel".

Since the "SEASPAN CHALLENGER" had the "STRIDER KING" on her own starboard side she was therefore the give-way vessel making the "STRIDER KING" the stand-on vessel.

Rule 16 requires that the give-way vessel "...so far as possible, take early and substantial action to keep well clear" while Rule 8 states that "any action taken to avoid collision shall...be positive, made in ample time...", and further that "any alteration of course and/or speed to avoid collision shall...be large enough to be readily apparent to another vessel..."

The "SEASPAN CHALLENGER" made no alteration of course but put her engines in neutral before the collision in order to slacken the towline, hoping that "STRIDER KING" would pass over the line.

Although Rule 17 states that the stand-on vessel "...shall keep her course and speed", it further states that "...as soon as it becomes apparent to..." the stand-on vessel "...that the vessel required to keep out of the way is not taking appropriate action...", or if the stand-on vessel "...finds herself so close that collision cannot be avoided by the action of the give-way vessel alone..." then she, the stand-on vessel, will take action to avoid collision.

The "STRIDER KING" apparently did not take any action to avoid collision.

Manoeuvring and Warning Signals to be used between vessels are specified in Rule 34 and Signals to Attract Attention are described in Rule 36. Rule 34 states that when a vessel "...is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle". Rule 36 states that "if necessary to attract the attention of another vessel any vessel may make light or sound signals that cannot be mistaken for any signal authorized elsewhere in these Rules..."

The "SEASPAN CHALLENGER", at the last moment, sounded the signal specified in Rule 35(c) for a towing vessel in restricted visibility; the "STRIDER KING" reportedly did not sound or make any signal.

9. VHF REQUIREMENTS

The **General Radio Regulations, Part II**, state in part:

> 78. The apparatus of all radio stations shall be worked only by operators holding a Canadian Certificate of Proficiency...
>
> 88. The holder of a Restricted Radiotelephone Operator's Certificate (Maritime) may act as a radiotelephone operator on a ship station...

Neither the skipper, nor the deck-hand apparently on watch aboard the "STRIDER KING" held a Restricted Radiotelephone Operator's Certificate (Maritime).

The **VHF Telephone Practices and Procedures Regulations** state in part:

> 9.(1) Subject to subsection (3), every ship other than a dredge or floating plant, that is maintaining a listening watch pursuant to section 8 shall make a navigation safety call on the frequency on which it is maintaining the listening watch
>
> (a) when risk of collision with another ship is deemed to exist under those provisions of the Collision Regula-

tions that apply in the area being navigated by the ship...

Section 8 of the Regulations indicates that the listening watch should be either on channel 16 or on the Vessel Traffic frequency whilst in a traffic zone.

After the "STRIDER KING" was recovered it was determined that both her VHFs (2) and the SSB radio were switched on at the time of the collision. One VHF radio was on channel 16; since the other was an electronic control type, it could not be determined which channel it was on; the SSB radio was on channel 7. The volume control settings could not be determined.

Neither the "STRIDER KING" nor the "SEASPAN CHALLENGER" made radio contact with each other prior to the time of collision.

10. **Watch Arrangement on "SEASPAN CHALLENGER"**

The deck and engine crew was divided in two twelve-hour watches commencing at 0600. The master, chief engineer, a deck-hand and a dayman kept watch from 0600 to 1800, and the mate, second engineer and a deck-hand stood watch from 1800 to 0600.

The crew was reportedly well rested prior to assuming watch at 1800, June 17.

11. **Experience and Qualifications of Personnel**

The skipper of the "STRIDER KING" did not hold a marine certificate nor was he required to by the Regulations. He had several years experience fishing in British Columbia waters.

The engineer/deck-hand was an experienced fisherman and held a certificate as watchkeeping engineer of a motor driven fishing vessel issued in 1968. He had no formal training in navigation.

It is not known how much rest he had before he assumed the last watch.

Both the master and the mate of the "SEASPAN CHALLENGER" hold Master Home Trade certificates, for vessels under 350 Tons and tugs of any size, issued in 1959 and 1980 respectively. The master has approximately 40 years sea experience and he has served as a master on tugs in B.C. waters for the last 27 years.

The mate has over 24 years sea experience; has served as mate on tugs in B.C. waters for several years.

Findings

The towing bridle and starboard bow of the "SEASPAN HARVESTER" struck the stem and the port side of the fishing vessel "STRIDER KING" causing her to capsize. As a result of the collision, two lives were lost and considerable damage was sustained by the "STRIDER KING".

Acknowledging that there was no evidence taken from the crew of the fishing vessel, it would appear that the following factors contributed to this collision:

- the "SEASPAN CHALLENGER" correctly ascertained that the "STRIDER KING" would pass clear of the tug, but, contrary to Rule 7 of the International Collision Regulations, failed to ascertain that there was risk of collision between the "STRIDER KING" and the tow, the barge "SEASPAN HARVESTER";

- contrary to Rule 5 of the International Collision Regulations, the "SEASPAN CHALLENGER" failed to maintain a proper look-out, in that she did not detect the risk of collision with her barge until it was too late;

- the "SEASPAN CHALLENGER", as a give-way vessel, failed to take appropriate action to avoid collision as described in Rules 8 and 15 of the International Collision Regulations;

- the "STRIDER KING" failed to keep a proper look-out as required by Rule 5 and subsequently failed to take any action to avoid collision as described in Rule 17 of the International Collision Regulations; and

- both vessels failed to give emergency sound signals to attract attention as required by Rule 36 of the International Collision Regulations.

Other Findings

Neither vessel attempted to use the VHF radiotelephone to communicate with one another.

The deck-hand, apparently on watch on the "STRIDER KING", had no formal navigational training, nor was it required.

OTTAWA, ONTARIO
FEBRUARY, 1987.

ANNEX

REGULATIONS FOR THE PREVENTION OF COLLISIONS

Short Title

1. These Regulations may be cited as the *Collision Regulations*.

SCHEDULE I

(*s. 2*)

INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA, 1972 WITH CANADIAN MODIFICATIONS

PART A—GENERAL

RULE 1

Application—International

(*a*) These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.

RULE 2

Responsibility

(*a*) Nothing in these Rules shall exonerate any vessel, or the owner, master or crew thereof, from the consequences of any neglect to comply with these Rules or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

(*b*) In construing and complying with these Rules due regard shall be had to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels involved, which may make a departure from these Rules necessary to avoid immediate danger.

RULE 3

General Definitions

For the purpose of these Rules, except where the context otherwise requires:

(*g*) The term "vessel restricted in her ability to manoeuvre" means a vessel which from the nature of her work is restricted in her ability to manoeuvre as required by these Rules and is therefore unable to keep out of the way of another vessel.

The term "vessels restricted in their ability to manoeuvre" shall include but not be limited to:

(vi) a vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course.

APPENDICE

RÈGLEMENT POUR PRÉVENIR LES ABORDAGES

Titre abrégé

1. Le présent règlement peut être cité sous le titre: *Règlement sur les abordages*.

ANNEXE I

(*art. 2*)

RÈGLEMENT INTERNATIONAL DE 1972 POUR PRÉVENIR LES ABORDAGES EN MER, AVEC MODIFICATIONS CANADIENNES

PARTIE A—GÉNÉRALITÉS

RÈGLE 1

Application—International

a) Les présentes règles s'appliquent à tous les navires en haute mer et dans toutes les eaux attenantes accessibles aux navires de mer.

RÈGLE 2

Responsabilité

a) Aucune disposition des présentes règles ne saurait exonérer soit un navire, soit son propriétaire, son capitaine ou son équipage des conséquences d'une négligence quelconque quant à l'application des présentes règles ou quant à toute précaution que commandent l'expérience ordinaire du marin ou les circonstances particulières dans lesquelles se trouve le navire.

b) En interprétant et en appliquant les présentes règles, on doit tenir dûment compte de tous les dangers de la navigation et des risques d'abordage, ainsi que de toutes les circonstances particulières, notamment les limites d'utilisation des navires en cause, qui peuvent obliger à s'écarter des présentes règles pour éviter un danger immédiat.

RÈGLE 3

Définitions générales

Aux fins des présentes règles, sauf dispositions contraires résultant du contexte:

g) L'expression «navire à capacité de manœuvre restreinte» désigne tout navire dont la capacité à manœuvrer conformément aux présentes règles est limitée de par la nature de ses travaux, et qui ne peut par conséquent pas s'écarter de la route d'un autre navire.

L'expression «les navires à capacité de manœuvre restreinte» comprennent, sans que cette liste soit limitative:

(vi) les navires en train d'effectuer une opération de remorquage qui permet difficilement au navire remorqueur et à sa remorque de modifier leur route.

PART B—STEERING AND SAILING RULES

SECTION I—CONDUCT OF VESSELS IN ANY CONDITION OF VISIBILITY

RULE 4

Application

Rules in this Section apply in any condition of visibility.

RULE 5

Look-out

Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

RULE 7

Risk of Collision

(*a*) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.

(*b*) Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.

(*c*) Assumptions shall not be made on the basis of scanty information, especially scanty radar information.

(*d*) In determining if risk of collision exists the following considerations shall be among those taken into account:

(i) such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change,

(ii) such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.

RULE 8

Action to avoid Collision

(*a*) Any action taken to avoid collision shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.

(*b*) Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.

PARTIE B—RÈGLES DE BARRE ET DE ROUTE

SECTION I—CONDUITE DES NAVIRES DANS TOUTES LES CONDITIONS DE VISIBILITÉ

RÈGLE 4

Champ d'application

Les règles de la présente section s'appliquent dans toutes les conditions de visibilité.

RÈGLE 5

Veille

Tout navire doit en permanence assurer une veille visuelle et auditive appropriée, en utilisant également tous les moyens disponibles qui sont adaptés aux circonstances et conditions existantes, de manière à permettre une pleine appréciation de la situation et du risque d'abordage.

RÈGLE 7

Risque d'abordage

a) Tout navire doit utiliser tous les moyens disponibles qui sont adaptés aux circonstances et conditions existantes pour déterminer s'il existe un risque d'abordage. S'il y a doute quant au risque d'abordage, on doit considérer que ce risque existe.

b) S'il y a à bord un équipement radar en état de marche, on doit l'utiliser de façon appropriée en recourant, en particulier, au balayage à longue portée afin de déceler à l'avance un risque d'abordage, ainsi qu'au «plotting» radar ou à toute autre observation systématique équivalente des objets détectés.

c) On doit éviter de tirer des conclusions de renseignements insuffisants, notamment de renseignements radar insuffisants.

d) L'évaluation d'un risque d'abordage doit notamment tenir compte des considérations suivantes:

(i) il y a risque d'abordage si le relèvement au compas d'un navire qui s'approche ne change pas de manière appréciable;

(ii) un tel risque peut parfois exister même si l'on observe une variation appréciable du relèvement, particulièrement lorsque l'on s'approche d'un très grand navire, d'un train de remorque ou d'un navire qui est à courte distance.

RÈGLE 8

Manœuvre pour éviter les abordages

a) Toute manœuvre entreprise pour éviter un abordage doit, si les circonstances le permettent, être exécutée franchement, largement à temps et conformément aux bons usages maritimes.

b) Tout changement de cap ou de vitesse, ou des deux à la fois, visant à éviter un abordage doit, si les circonstances le permettent, être assez important pour être immédiatement perçu par tout navire qui l'observe visuellement ou au radar; une succession de changements peu importants de cap ou de vitesse, ou des deux à la fois, est à éviter.

(c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close-quarters situation.

(d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.

(e) If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.

c) Si le navire a suffisamment de place, le changement de cap à lui seul peut être la manœuvre la plus efficace pour éviter de se trouver en situation très rapprochée à condition que cette manœuvre soit faite largement à temps, qu'elle soit franche et qu'elle n'aboutisse pas à une autre situation très rapprochée.

d) Les manœuvres effectuées pour éviter l'abordage avec un autre navire doivent être telles qu'elles permettent de passer à une distance suffisante. L'efficacité des manœuvres doit être attentivement contrôlée jusqu'à ce que l'autre navire soit définitivement paré et clair.

e) Si cela est nécessaire pour éviter un abordage ou pour laisser plus de temps pour apprécier la situation, un navire doit réduire sa vitesse ou casser son erre en arrêtant son appareil propulsif ou en battant en arrière au moyen de cet appareil.

SECTION II—CONDUCT OF VESSELS IN SIGHT OF ONE ANOTHER

RULE 11

Application

Rules in this Section apply to vessels in sight of one another.

RULE 15

Crossing Situation—International

(a) When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

RULE 16

Action by Give-way Vessel

Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear.

RULE 17

Action by Stand-on Vessel

(a) (i) Where one of two vessels is to keep out of the way, the other shall keep her course and speed.

(ii) The latter vessel may however take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

(b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

(c) A power-driven vessel which takes action in a crossing situation in accordance with subparagraph (a)(ii) of this Rule to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.

(d) This Rule does not relieve the give-way vessel of her obligation to keep out of the way.

SECTION II—CONDUITE DES NAVIRES EN VUE LES UNS DES AUTRES

RÈGLE 11

Champ d'application

Les règles de la présente section s'appliquent aux navires qui sont en vue les uns des autres.

RÈGLE 15

Navires dont les routes se croisent—International

a) Lorsque deux navires à propulsion mécanique font des routes qui se croisent de telle sorte qu'il existe un risque d'abordage, le navire qui voit l'autre navire sur tribord doit s'écarter de la route de celui-ci et, si les circonstances le permettent, éviter de croiser sa route sur l'avant.

RÈGLE 16

Manœuvre du navire non privilégié

Tout navire qui est tenu de s'écarter de la route d'un autre navire doit, autant que possible, manœuvrer de bonne heure et franchement de manière à s'écarter largement.

RÈGLE 17

Manœuvre du navire privilégié

a) (i) Lorsqu'un navire est tenu de s'écarter de la route d'un autre navire, cet autre navire doit maintenir son cap et sa vitesse.

(ii) Néanmoins, ce dernier peut manœuvrer, afin d'éviter l'abordage par sa seule manœuvre, aussitôt qu'il lui paraît évident que le navire qui est dans l'obligation de s'écarter de sa route n'effectue pas la manœuvre appropriée prescrite par les présentes règles.

b) Quand, pour une cause quelconque, le navire qui est tenu de maintenir son cap et sa vitesse se trouve tellement près de l'autre que l'abordage ne peut être évité par la seule manœuvre du navire qui doit laisser la route libre, il doit de son côté faire la manœuvre qui est la meilleure pour aider à éviter l'abordage.

c) Un navire à propulsion mécanique qui manœuvre pour éviter un abordage avec un autre navire à propulsion mécanique dont la route croise la sienne dans les conditions prévues à l'alinéa a)(ii) de la présente règle ne doit pas, si les circonstances le permettent, abattre sur bâbord lorsque l'autre navire est bâbord à lui.

d) La présente règle ne saurait dispenser le navire qui doit laisser la route libre de l'obligation de s'écarter de la route de l'autre navire.

PART C—LIGHTS AND SHAPES

RULE 20

Application

(*a*) Rules in this Part shall be complied with in all weathers.

(*d*) The Rules concerning shapes shall be complied with by day.

RULE 27

Vessels not under Command or Restricted in their Ability to Manoeuvre

(*b*) A vessel restricted in her ability to manoeuvre, except a vessel engaged in mineclearance operations, shall exhibit:

(ii) three shapes in a vertical line where they can best be seen. The highest and lowest of these shapes shall be balls and the middle one a diamond,

PART D—SOUND AND LIGHT SIGNALS

RULE 34

Manoeuvring and Warning Signals—International

(*d*) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

RULE 36

Signals to attract Attention

If necessary to attract the attention of another vessel any vessel may make light or sound signals that cannot be mistaken for any signal authorized elsewhere in these Rules, or may direct the beam of her searchlight in the direction of the danger, in such a way as not to embarrass any vessel. Any light to attract the attention of another vessel shall be such that it cannot be mistaken for any aid to navigation. For the purpose of this Rule the use of high intensity intermittant or revolving lights, such as strobe lights, shall be avoided.

PARTIE C—FEUX ET MARQUES

RÈGLE 20

Champ d'application

a) Les règles de la présente partie doivent être observées par tous les temps.

d) Les règles concernant les marques doivent être observées de jour.

RÈGLE 27

Navires qui ne sont pas maîtres de leur manœuvre et navires à capacité de manœuvre restreinte

b) Un navire à capacité de manœuvre restreinte, autre qu'un navire effectuant des opérations de déminage, doit montrer:

(ii) à l'endroit le plus visible, trois marques superposées, les marques supérieure et inférieure étant des boules, celle du milieu un bicône;

PARTIE D—SIGNAUX SONORES ET LUMINEUX

RÈGLE 34

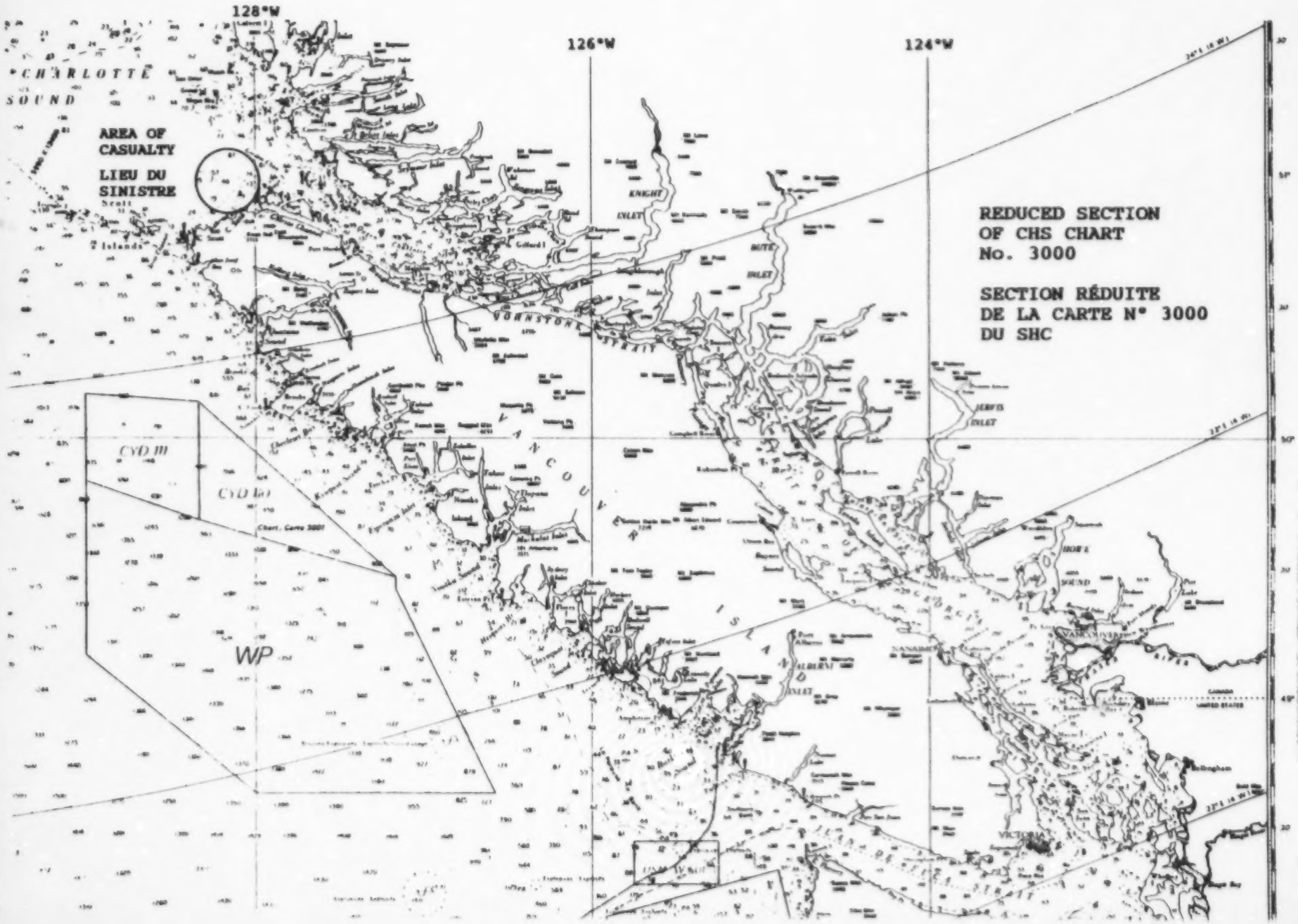
Signaux de manœuvre et signaux d'avertissement—International

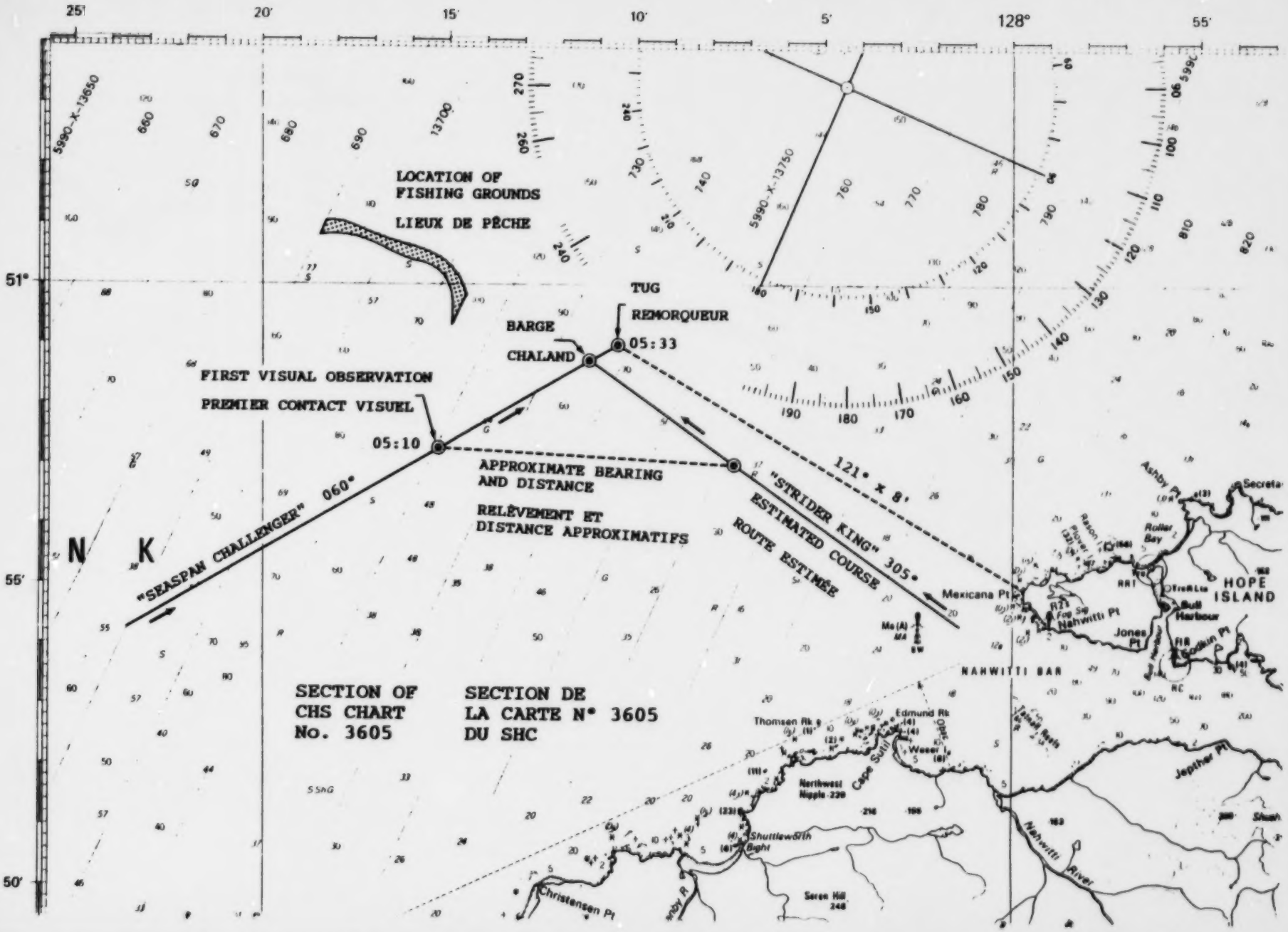
d) Lorsque deux navires en vue l'un de l'autre s'approchent l'un de l'autre et que, pour une raison quelconque, l'un d'eux ne comprend pas les intentions ou les manœuvres de l'autre, ou se demande si l'autre navire prend les mesures suffisantes pour éviter l'abordage, le navire qui a des doutes les exprime immédiatement en émettant au sifflet une série rapide d'au moins cinq sons brefs. Ce signal peut être complété par un signal lumineux d'au moins cinq éclats brefs et rapides.

RÈGLE 36

Signaux destinés à appeler l'attention

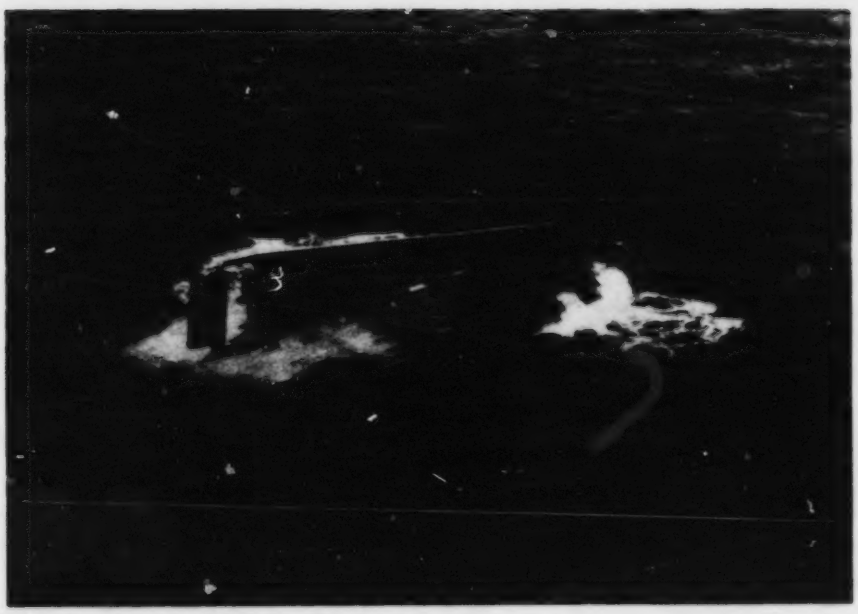
Tout navire peut, s'il juge nécessaire d'appeler l'attention d'un autre navire, émettre des signaux lumineux ou sonores ne pouvant être confondus avec tout autre signal autorisé par l'une quelconque des présentes règles, ou bien orienter le faisceau de son projecteur en direction du danger qui menace un navire de façon telle que ce faisceau ne puisse gêner d'autres navires. Tout feu destiné à attirer l'attention d'un autre navire ne doit pas pouvoir être confondu avec une aide à la navigation. Aux fins de la présente règle, l'emploi de feux intermittents ou tournants à haute intensité, tels que les phares gyroscopiques, doit être évité.


128°W
126°W
124°W
CHARLOTTE SOUND
AREA OF CASUALTY
LIEU DU SINISTRE
Scott Islands
KNIGHT INLET
BUTE INLET
JOHNSTONE STRAIT
VANCOUVER ISLAND
CYD III
CYD IV
WP
REDUCED SECTION
OF CHS CHART
No. 3000
SECTION RÉDUITE
DE LA CARTE N° 3000
DU SHC


25'
20'
15'
10'
5'
128°
55'
51°
55'
50'
LOCATION OF FISHING GROUNDS
LIEUX DE PÊCHE
TUG
REMORQUEUR
BARGE
CHALAND
05:33
FIRST VISUAL OBSERVATION
PREMIER CONTACT VISUEL
05:10
APPROXIMATE BEARING AND DISTANCE
RELÈVEMENT ET DISTANCE APPROXIMATIFS
"SEASPAN CHALLENGER" 060°
"STRIDER KING" 305°
ESTIMATED COURSE
ROUTE ESTIMÉE
121° x 8'
N K
SECTION OF CHS CHART No. 3605
SECTION DE LA CARTE N° 3605 DU SHC
HOPE ISLAND
NAHWITTI BAR
Mexicana Pt
Nahwitti Pt
Jones Pt
Bull Harbour
Ashby Pt
Roller Bay
Jupiter Pt
Nahwitti River
Cape Scott
Northwest Nipple 220
Shuttleworth Bight
Christensen Pt
Edmund Rk
Thomsen Rk
Weser
Serce Hill 248

F.V. "STRIDER KING".

B.P. "STRIDER KING".



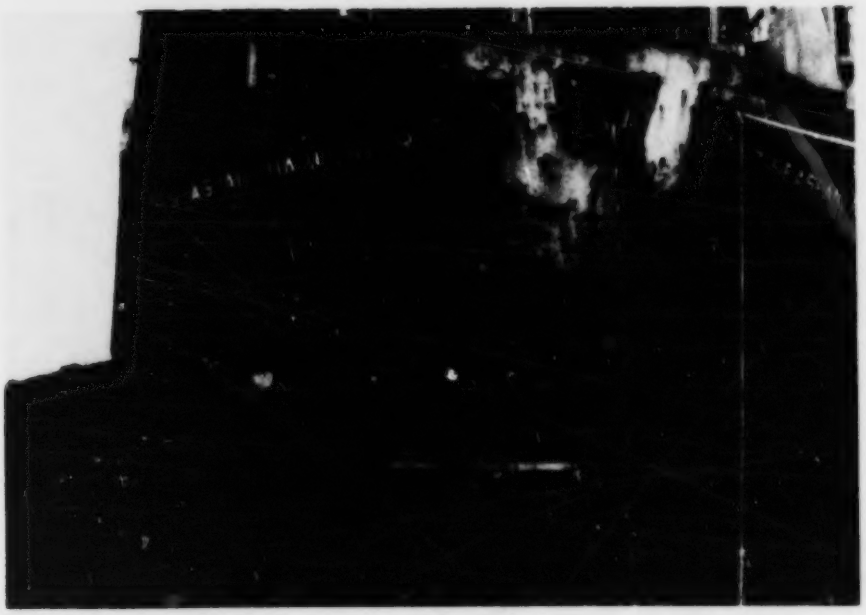
Overturned after collision.

Chaviré après l'abordage.

After vessel righted, showing damage.
Démontre avaries après le redressement du navire.

Helmsman's seat. Siège du timonier.

Barge "SEASPAN HARVESTER".
Chaland "SEASPAN HARVESTER".



Attachment of towing bridle forward.
Pitons à plaque des pattes d'oie à l'avant.